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Lewis A. Jones accompanied by F.E. Staebner inspected a project proposed to be constructed by the Subsistence Homesteads Division of the Department of the Interior near Elkins, West Va. Mr. Jones then inspected Emergency conservation work in Ohio and Indiana.

Two cheap dams have been developed for use in gullies which are to be planted with trees or vegetation. One of these is a small dam of wire and the other is a small dam of plank construction.

After inspecting the ECW projects, Mr. Jones met L.C. Tschudy at Chicago for a conference relating to work in the northern district. Mr. Tschudy is supervising the work of the engineers in North Dakota, Minnesota, and Wisconsin who are preparing plans of dams for construction by the CCC next spring. Plans have been prepared for earth dams ranging up to 20 feet in height; masonry dams ranging up to 10 feet in height; and timber crib dams ranging up to 8 feet in height, for use in North Dakota.

The drainage improvements on the Arthurdale Project near Reedsville, West Va., a subsistence homestead project in charge of F.E. Staebner, will include the deepening, widening, and straightening of Decker's Creek, a stream with a watershed varying through the improved length from an area of about 7 square miles to approximately 14 square miles. Approximately 50,000 cubic yards of earth will be moved in making this channel improvement. Two excavating machines, a 1/2-yard drag-line and a 1-yard clam shell, are now at work on the project.

Tile drainage will be installed on approximately 281 acres, of which at least a third was definitely in swamp prior to the improvements; 175,000 feet of tile will be required. Practically all of this will be installed as systematic drainage, as there is very little opportunity to use random drainage to advantage on this project. The tile will be largely 4-inch in size although a suitable amount of larger sizes will be used. One small brook will be caught by a surface inlet and diverted underground through a length of about 1,700 feet of 18-inch tile. Surface inlets are being avoided as much as possible, but a number of smaller surface inlets will be installed where the outflow from springs is to be captured. It is planned to divert two small brooks by means of hand-dug ditches around fields they now run through.

For the past two months D.L. Yarnell has been engaged on a study of excessive precipitations for short periods of time. With the assistance of 40 CWA workers, he has completed the data for 100 of the 200 rainfall stations in the United States and insular possessions. The entire record for each rainfall station at which Friez automatic rain gages have been installed, is being analyzed. A graph showing the maximum rates of rainfall in inches per hour for various periods of time from 5 minutes up to 400 minutes is being prepared for each station and equations will be derived for determining the maximum rate. In addition to these graphs, frequency curves are being prepared for each station, showing for rainfalls of various durations from 5 to 120 minutes, the maximum rate which may be expected for any given year. These two graphs contain all of the data for each station. From these curves, the time-intensity curves may be prepared. Likewise, maximum rates for short periods of time may be determined for various years.



It is hoped that the study may be completed on all of the rainfall stations. The investigation is being carried through 1933 so that it will be the latest information available on the subject. No such comprehensive study on this subject has ever been made.

The data obtained from this investigation will be useful in the design of terracing systems, large tile systems carrying surface water, culvert water ways for small watersheds, storm water systems in cities, and also in numerous other engineering projects connected with the carrying of drainage water. The greater portion of the data will be printed in a bulletin so that it will be available to anyone desiring such information.

An examination of erosion conditions was made in the vicinity of Dayton, Waitsburg, and Walla Walla, Wash. on January 23 by P. C. McGrew. In one field gullies were found to be about 20 to 30 feet apart and too deep for harvesting across with machinery. In order to make possible the crossing of the gullies with machinery during harvesting operations it will be necessary to plow in the gullies and the owner estimated that this would necessitate destroying about one-third of the wheat crop.

A soil erosion exhibit was prepared by V. D. Young and J. M. Snyder of the Zanesville Soil Erosion Experiment Station and was exhibited at the State University of Columbus, Ohio during Farmers' Week ending February 3. At the request of the Zanesville Chamber of Commerce it was displayed during the following week in the front window of the Public Service Company at Zanesville, Ohio.

Results giving the run-off and soil losses from terraced cultivated and terraced pasture land were collected at the Tyler, Texas station during the year 1933. R.W. Baird reports that 4.74 times as much run-off and 26.9 times as much soil was lost from the cultivated area as from the pasture area.

A. T. Holman reports that during the last one-half of the year 1933 a natural, unterraced watershed planted in three crop strips had an erosion loss of 20.1 tons of soil per acre. One-half of the area was in oats followed by clover, one-fourth in corn, and one-fourth in soybeans followed by wheat. On similar, though not identical, terraced areas the corresponding loss was 3.1 tons of soil per acre, indicating that terraces were much more effective in reducing erosion losses than strip cropping at the Bethany Station.

Fred C. Scobey was appointed a member of the Committee on Research, American Society of Civil Engineers, for a four-year term.

Harry F. Blaney was elected President of the Los Angeles Federal Business Association, for the term expiring July 1 next.

The design for the Imperial Valley, Calif., silt laboratory to be built at the Rositas dam on the Alamo River, near El Centro, was prepared by R. L. Parshall in cooperation with engineers of the Bureau of Reclamation at Denver. The laboratory will consist of a flume 100 feet long, 10 feet wide and 8 feet deep, having a capacity of 100 cubic feet per sec. The flume is arranged so that it will be possible to test various types of desilting devices and provision is made for sampling the water for the purpose of determining the silt content and the efficiency of the various devices in removing silt. Construction work on this project under Mr. Parshall's supervision was started January 29.

Karl Harris gave an informal talk on Citrus Irrigation before the meeting of the North Central Avenue Branch of the Arizona Citrus Growers Association, January 8.



Upon request of the Director of the Arizona Experiment Station, Mr. Harris examined 20 separate pieces of land totaling 2,198 acres, to assist in selecting land for the Subsistence Homestead project.

In connection with the water-spreading project in southern California, Dean C. Muckel installed four recorder stations on the lower Santa Ana River to measure the amount and rate of percolation of the water spread in the river channel by the Flood Control District. This work is being carried on in cooperation with the Orange County Flood Control District. On the Anaheim plot the top layer of soil, consisting mostly of silt, is being removed, in order to determine the effect of silt on percolation rates.

Carl Rohwer prepared a closure for his paper on Evaporation from different Types of Pans which appeared in the February, 1933, issue of the Proceedings of the American Society of Civil Engineers. The original paper contained suggestions as to the types of evaporation pans to be used for different conditions. These recommendations have evoked considerable interest among engineers, and it is hoped that the discussions will help standardize the practice in making evaporation observations.

W.W. McLaughlin visited the silt laboratory project in Imperial Valley, Calif., and the Citrus irrigation project at Phoenix, Arizona, during January. He also attended a conference of Oregon Experiment Station workers and took part in a discussion of soil moisture and irrigation problems.

A. Lincoln Fellows is preparing and giving a series of radio talks during the Farm and Home Hour over Station K G O, including the Pacific Coast network. These talks describe the work of the Division of Irrigation and will present illustrations of the various accomplishments of timely interest and value to the farmer. It is expected that the series, which began Feb. 7, will continue at weekly intervals for about three months.

R. B. Gray spent the period February 3 to 10 on a trip through southern Minnesota, Iowa, eastern Nebraska and Kansas, making observations on wind-electric plants operating in those locations. He reports, in general, satisfactory performance, and that some of the plants have been in operation between seven and eight years with the original set of batteries good for a couple of years more. While in Ames, he conferred with C. K. Shedd and L. C. Schoenleber on matters in connection with the corn production project.

After a four months' stay in Washington, working on plans for the farm tillage machinery laboratory to be built at Auburn, Ala., from Public Works funds, John W. Randolph returned to Auburn. He was accompanied by O. L. Garver who will assist him there for several weeks before returning to Washington.

Construction work on a tower drier and drying shed extension from Public Works funds has been started at Jeanerette, Louisiana by E.D. Gordon. A cottage is soon to be started at the same station, also with Public Works funds.

G. A. Cumings attended the meeting of the Association of Southern Agricultural Workers in Memphis on January 31, and presented a paper on the 1933 fertilizer placement experiments with cotton before the Agronomy Section. Mr. Cumings stopped at Muscle Shoals to confer with officials of the Tennessee Valley Authority regarding fertilizers to be manufactured experimentally. It was found that fertilizers will be made on a small



scale and tested in the various Tennessee Valley States. Among the stops to confer with cooperators regarding future fertilizer-placement work was the Virginia Truck Experiment Station at Norfolk. Here it was found that the abnormally cold weather had killed the spinach, kale, cabbage, and other truck crops. Many growers in this area lost their crops during the storm and flood of six months ago. Heavy applications of commercial fertilizers are applied to these crops and a large portion of it will be lost.

A push-type, tractor-operated cotton-stalk shaver and a horse-drawn sled shaver recently developed by D. A. Isler have been tested by him in cotton fields at Balmorhea, Texas. He reports less boll shattering with the push-type shaver as well as greater stability. The stalks in this region attain heights of 5 to 7 feet and have butts as large as 2 inches in diameter.

E. M. Mervine attended a meeting of the field men of the Great Western Sugar Company, at Johnstown, Colorado, January 20. The territory supervised by these men raises about one-third of the sugar manufactured in the United States. Field methods which might improve the crop were discussed. Mr. Mervine discussed informally planting and blocking.

Two scarifiers have been developed by the Bureau and tested at Arlington Farm, Va. One of these machines is suitable for farm use and may be constructed by the farmer with equipment available on the farm or easily obtained. The other machine was designed for use by experiment stations or commercial seed firms. W. M. Hurst is preparing a report dealing with this subject.

A report on seed cleaners based on experiments made at St. Paul, Minn. and at Arlington Farm, Va., is being prepared by W. R. Humphries. The preparation of a manuscript dealing with the care and operation of mowers and binders is also in progress.

The survey of farm houses, referred to in the January News Letter, is yielding much interesting data. Farm house plans have been sent to the Washington office by 16 of the cooperating States. These cover a wide variety of plans for small houses as well as plans for remodelling existing houses. A Farmers' bulletin will be prepared in the near future consisting chiefly of house plans selected from those submitted by the States or prepared in this Bureau.